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## CENTRAL INTELLIGENCE AGENCY

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SECURITY INFORMATION

50X1-HUM

## INFORMATION REPORT

REPORT

CD NO.

COUNTRY East Germany

SUBJECT Oils Produced at Leuna

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THIS IS UNEVALUATED INFO 50X1-HUM

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1. In the process of producing ester oils from higher alcohols and adipic acid, [redacted] alcohols [redacted] used [redacted] 50X1-HUM

[redacted] were those with carbon chains of C-6 to C-9. [redacted]

[redacted] the alcohols used were the high boiling alcohol fraction, boiling point 145-163C.

2. [redacted] the process of manufacture through the use of a flow chart.

[redacted] Dr. Zern of the organic laboratory was in charge of this work.

3. [redacted]

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3. [redacted] the part of the plant moved to the USSR accounted for about half of the ester oil production of Leuna. The ester oils were known as Leuna I oils. The production of these oils was stopped in 1947 as they were not good for the steam turbines in the plant due to ease of saponification by the moisture and heat present and the resulting corrosion caused by the free acids. [redacted]

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[redacted] these oils were not used in jet or other airplane motors. [redacted] a chlorinated oil was used in airplane motors because of its value as a high pressure lubricant. Although these chlorinated oils were corrosive, this did not matter as the airplane engines were torn down and reworked after about 70 hours of flying time. On the other hand good turbine oils ran from 2-3 years before they were discarded, and therefore must not be corrosive.

4. [redacted] the oil showed little change with use. [redacted]

The tests used were saponification and corrosion, and these tests were made at various intervals of time during use. [redacted]

5. [redacted] this oil has a low viscosity number-- about 140. [redacted]

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[redacted] estimate viscosity of this oil [redacted] about 4-5 Engler at 50 C and 1.7 Engler at 100 C. [redacted] viscosity index at about 0.8. [redacted]

6.

[redacted]

Leuna 2-A oil was developed at Leuna as a lubricating oil for use in the plant turbines. It was designed to replace the unsatisfactory ester oils (Leuna I oils). It was not intended for turbojet aircraft. [redacted] chlorine and-sulfur-containing oils were used in aircraft. [redacted]

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7.

[redacted]

A polyethylene oil was mixed with a spindle oil in the proportions to give the desired viscosity. [redacted] the ethylene was polymerized at pressures of about 150 atm and without catalysts. The spindle oil was obtained by fractionating petroleum obtained from Lützkendorf or from synthetic oil made at Schkopau. [redacted] the viscosity of the 2-A oil was about 5 to 5.5 Engler at 50 C. [redacted]

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The 2-A oil was made only for plant use and the production may have been about 20-30 times a year. [redacted] turbine oil production at Leuna may have been about 1-10 per month of Lützkendorf oil and about half that amount of Schkopau oil. Both of these oils were inferior to the 2-A oil. [redacted]

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